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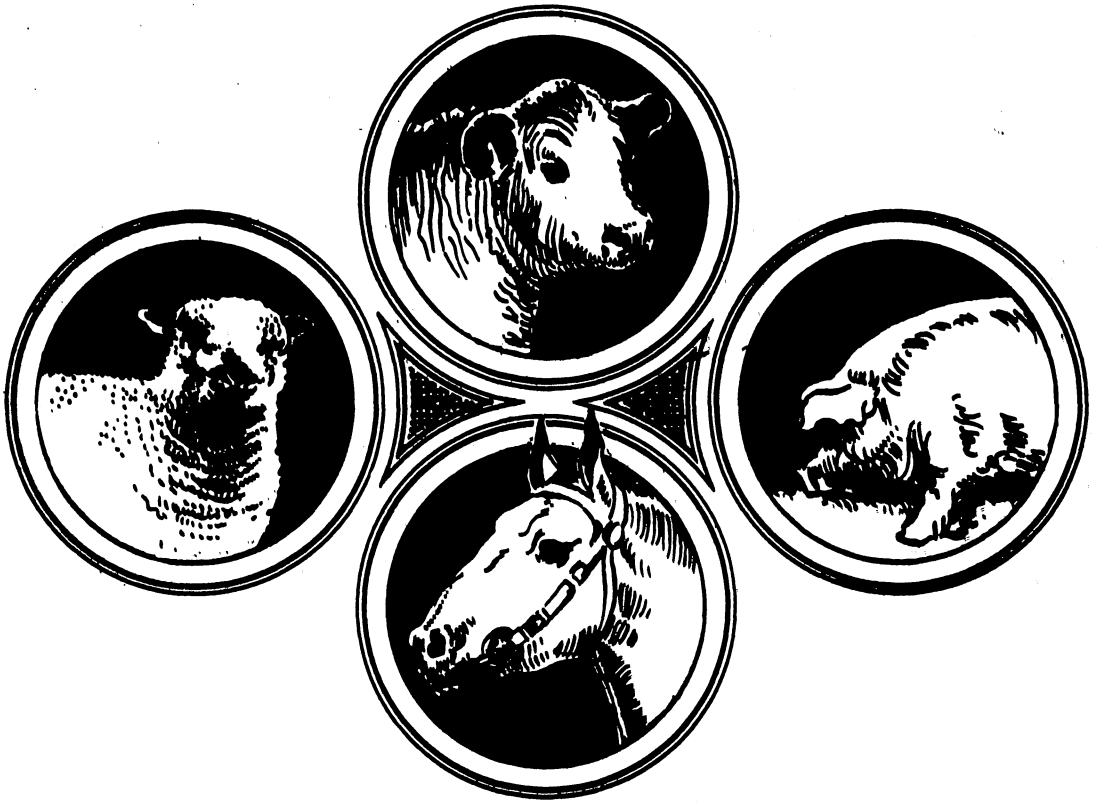

UNITED STATES DEPARTMENT
OF AGRICULTURE
WASHINGTON,
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THE EXTENSION ANIMAL HUSBANDMAN

Issued quarterly by the Bureau of Animal Industry
and Extension Service, Cooperating.
C. D. Lowe, Senior Extension Animal Husbandman,
K. F. Warner, Senior Extension Meat Specialist.

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ILLINOIS CATTLE FEEDING PROGRAM

By E. T. Robbins, Livestock Extension Specialist,
University of Illinois

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In 1937 the livestock extension program in Illinois gave special emphasis to the problems of beef cattle men. The scarcity of feed made their prospects uncertain. They were eager for any information about possible substitutes for corn. Molasses came in for much attention. Feeders were advised about its use and the probable financial returns from it. They were advised about the use of oats, barley, and wheat as partial substitutes for corn. At harvest time last summer feeders were urged to begin promptly to make a liberal use of oats, barley, and wheat so as to fatten their cattle as rapidly as possible in preparation for sale in the fall after a possible short finishing period upon new corn.

These problems were discussed at 53 county livestock schools, many of which were held in the late winter and spring and some in the summer and fall. The total attendance at these schools was 2,516, an average of 47. In each case the county agent gave a special invitation to discussion leaders to attend these county schools. Some of these men cooperated by leading the discussion in local meetings afterwards. While most of these schools included some discussion of other kinds of livestock, most of the time was given to the beef cattle problems.

Thirteen special beef cattle tours were conducted to farms where good beef cattle management was followed. A total of 88 farms were visited on such tours. The total attendance on these tours was 675, or an average of 52 cattlemen. In addition to these there were 21 general livestock tours, all of which included some beef cattle demonstrations. A total of 121 farms were included in these tours, or an average of 6 farms a tour. The attendance on these tours was 1,966, or an average of 94. This makes a total of 34 county tours devoted more or less to beef cattle demonstrations, with a total of 209 farms, or an average of 6 a tour, and a total of 2,641 attending, or an average of 78. Most of these tours were held in the northern half of the State and especially in the northwest portion where there is the greatest volume of cattle feeding.

The plan on each tour involved an explanation by each owner concerning his cattle and his methods of buying, feeding, and marketing. Then the county agent made such comments as he desired to make. Then the extension specialist commented upon the plan followed and emphasized particularly the features which seemed to be responsible.

for the good results attained. When a market man was present he discussed the grades of cattle, market prices, and prospects.

The farms visited were selected for the primary purpose of featuring good practices in the management of beef cattle. A few farms with poor practices were included when the owners desired to have stops made at their places. The policy was followed of praising the good work which was done and saying very little about the undesirable features which might be seen. These weak points, in some cases, had to be mentioned in answer to questions, and then the suggestion was made that results might have been better if the same plan had been followed which had been demonstrated on other farms. Not much discussion was necessary and there was very little argument. The plan which was followed featuredthe suggestion in each case that success attended the use of the methods demonstrated. It seems to be true that suggestion is more powerful than argument. Cattlemen adopt a new practice readily if they realize others are doing it successfully.

In some cases feeders had selected the wrong class of cattle for the kind of feeding program which they used or for the time of year when they planned to market them. In other cases insufficient protein was fed to balance the ration sufficiently. This year a special emphasis was placed on feeding well-balanced rations. In some cases the high-protein feeds cost no more than corn. Visitors at the demonstrations could see plainly that the cattle getting sufficient protein had gained more rapidly and were getting fat more quickly than cattle whose protein requirements were neglected.

Kane County, in northern Illinois, affords a good example of the results of continued beef cattle demonstrations. During the last 8 years an annual tour has been held about the middle of November. The attendance and interest always have been good and seem to be increasing. The usual plan was followed this year. Six farms with good practices were visited during the morning and then a dinner was served in the basement of a church at 12:30 p.m. This was followed by about 1 1/2 hours of discussion. About 70 men attended the tour, and exactly 60 sat down to dinner and stayed until the close of the meeting. During the 8 years of this program it has become evident that feeding practices in Kane County are becoming quite generally stabilized along the lines used by the most successful cattlemen.

The Annual Cattle Feeders' Day at the university has helped to promote this extension cattle feeding project. This event is held each year at the time when most of the experimental cattle are about ready to sell. For example, this year the experimental work featured

the use of molasses and oats as substitutes for corn. Seven lots of 10 steers each were ready for market when the Cattle Feeders' Day was held on September 17. The crowd of about 1,300 people exceeded previous numbers and overflowed the seating capacity of the big tent. Besides the oats and molasses, other problems of cattle feeders were discussed.

A helpful feature of this part of the project is the fact that the best of the experimental rations give results as good as any other cattle feeders obtain. Visiting cattlemen realize that the university gets as rapid gains, as cheap gains, and as quick a finish as any of them are getting. Also, the university cattle have become famous for returning a high average income. During the past 10 years of calf feeding at the University of Illinois the best rations each year averaged about $11.50 more net income a year than the poorest rations. Averaging all the experimental lots during the 10 years, the average net income has been about $15 a calf. These facts have encouraged cattle feeders to adopt a good system and stick to it persistently.

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PERSONNEL NOTES

Maryland

J. M. Vial, extension animal husbandman, acted as judge of the Percheron, Belgian, the 4-H and Gold Medal Colt classes at the Hamilton County, Indiana, livestock show in September.

Montana

Howard G. Lewis was appointed extension livestock specialist for the Montana State College on October 6, 1937. Mr. Lewis was formerly connected with the North Dakota Extension Service in various capacities. James K. Wallace, U.S.D.A. livestock marketing specialist spent some time with Mr. Lewis in November on some cattle grading demonstration work.

North Dakota

Roy L. Olson, who has been connected with the State 4-H club department was appointed extension animal husbandman, effective November 1, 1937. Mr. Olson succeeds Geo. J. Baker, who is acting director of extension in the same State.

Oklahoma

Dan W. Arnold is acting extension animal husbandman for the Oklahoma A. & M. College during the leave period of Paul G. Adams. F. W. Beall continues to act as assistant extension animal husbandman.

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COMMERCIAL LAMB PRODUCTION AS A 4-H CLUB PROJECT

By F. W. Beall and Dan M. Arnold,
Animal Husbandry Extension Workers, Oklahoma A. & M. College

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The production of milk-fed lambs for market as a part of the 4-H club sheep project, was started in Oklahoma in 1936. Prior to that time the 4-H lamb club member was confined to the feeding of a maximum of three mutton-type lambs for show or the production of a flock of purebred ewes in the breeding phase.

The Oklahoma 4-H livestock show is held in March each year. A large number of well-finished, high-quality purebred or grade Hampshire, Shropshire and Southdown lambs are exhibited by 4-H club members in the fat market class. Although that part of the show has been very successful as an exhibition of type and finish in market lambs, it was felt that a more practical class was needed. Native mutton-type lambs average approximately one year in age at the time of the show and frequently attain excessive weight. To correct this situation, a class designated as the milk-fed lamb class has been adopted.

In order to understand the reason for adopting the milk lamb class, it is necessary to present a few facts regarding the commercial production of sheep in Oklahoma. A large percentage of the sheep produced in Oklahoma are found in approximately 20 counties in the central area where winter wheat is the major crop. Most of the breeding ewes in this area are Rambouillets shipped in from Texas or New Mexico as yearlings or two-year-olds. They are usually kept in the flock five or six years and then replaced with young ewes from the western ranges.

Under this system very few, if any, of the ewe lambs are kept for replacement purposes. Usually, Shropshire, Hampshire, or Southdown rams are crossed on the Rambouillet ewes. The cross produces a high-quality market lamb, but the ewe lambs are not considered desirable for flock replacement. It is usually planned to have the lamb crop come between October 1 and January 1. The ewes, together with the lamb crop, are grazed on the winter wheat pasture and the lambs are frequently fed grain in a creep. Under this system of management the lambs are marketed during March, April, or May. Rambouillet ewes are preferred for this system of sheep farming since they are relatively hardy, produce a good crop of wool, and breed earlier than native ewes. Since the system of

management outlined has been found profitable for commercial sheep producers in Oklahoma, and has been the subject of extension demonstrations with adults, it was felt that a 4-H club project should be adopted that would conform more closely with such a program.

Accordingly, the so-called milk-fed-lamb project was adopted in 1936. As originally adopted the rules provided that fine-wool, mutton-type, or crossbred lambs dropped after October 1 and weighing from 70 to 95 pounds would be exhibited at the March show. The classification provided for a class of five lambs owned by a single exhibitor. Under the project outlined the 4-H club exhibitor was required to own the ewes and keep a complete feed and production record on the entire project.

After the conclusion of the show the first year, it was found advisable to eliminate all strictly mutton-type lambs from the show. In order to maintain a strictly commercial class the rules at present provide that the lambs must show at least 50 percent fine-wool breeding. The purpose of this regulation is to encourage the boy to maintain a commercial flock of Rambouillet ewes with a purebred mutton-type ram.

The project was outlined in two counties in 1936 as an experiment. Consequently, only five groups were exhibited at the first show. In 1937 two additional counties were enrolled in the project and eleven groups of five lambs each were shown. The prize money in this special class is provided by the Oklahoma National Stockyards Company because of the fact that they are especially interested in promoting this type of lamb production.

Since this was a new type of 4-H demonstration in Oklahoma it was considered advisable to encourage it in only a limited number of counties at first. It has met with such success, however, that the project will be open to all sheep producing counties in 1938. Two of the district 4-H livestock shows have also provided similar classifications for 1938.

Due to the uniformity and high quality of the milk-fed lambs exhibited, a premium of 75 cents per hundredweight above the prevailing market price has been paid by Wilson & Co. and Armour & Co. for all the lambs exhibited each year.

The usual type of fat-lamb show has an important place in the 4-H club project because it teaches the boy the importance of type and quality. This more practical class that has just been discussed is equally important from the standpoint of economy and efficiency of production. The prospects for the 1938 show indicate that the project will continue to grow in favor with the older 4-H club members.

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4-H SWINE DEMONSTRATIONS IN TEXAS

Quite a large amount of demonstration work in swine production was done with 4-H club boys during 1936. The hog is a small animal. The initial purchase price of a pig is not very high. The amount of land required for the hog enterprise is small and the required equipment is not costly. A 4-H club boy usually finds that the necessary animals, material and equipment are within his reach, and, therefore, many boys engage in swine demonstrations who are not able to finance demonstrations with cattle feeding. In 1936 a larger number of 4-H club boys conducted swine demonstrations than any other type of demonstrations. The number of boys in pig-club work is also increasing from year to year. In 1935, 893 4-H club boys conducted swine demonstrations and in 1936 this number grew to 2,992 who completed their demonstrations.

The demonstration, as planned for the 4-H club boy, does not differ a great deal from the plan employed with adults. In this sense 4-H pig-club work directly carries out the 4-H club slogan of "To make the best better." When 4-H club work first started in this State it was looked upon as a project in which the boy would take one pig and feed it. Naturally this became more of a pet-pig project and since the pig was more or less of a pet, he received all the choice morsels about the place and enjoyed many of the privileges that were not extended to ordinary hogs. These pigs were allowed run of the entire place and frequently were allowed to stay in the corn crib to their heart's content. For a number of years we have been attempting to break down this whole tradition of the 4-H club pet pig and in its stead build a hog enterprise for the boys that was large enough and involved sufficient animals so that the enterprise would require the employing of practical methods of production. Progress along this line has been steady but slow. A study of reports from 1930 to the present reveals some progress. In 1930 the demonstrations averaged 2.2 hogs per boy. In 1931 they averaged 2.5 hogs per boy. In 1932 they averaged 2.7 hogs per boy. In 1933 they averaged 3.0 hogs per boy. In 1934 they averaged 4.9 hogs per boy. In 1935 they averaged 4.5 hogs per boy. In 1936 they averaged 1.9 hogs per boy. It will be noted from this that the number of pigs per boy steadily increased from 1930 to 1934 and that during 1935 and 1936 there has been a decrease in number of pigs per boy. By observing only these figures it would seem that the tendency has been towards fewer hogs per boy. It is observed, however, that during 1935 and 1936 there has been a very rapid and constant increase in the numbers of boys conducting 4-H club demonstrations. In 1934 there were only 742 boys conducting 4-H club demonstrations whereas in 1936 there were 2,992 boys completing 4-H club pig demonstrations. It is quite likely that this extreme rapid expansion in number of boys explains the reason for the fewer number of pigs per boy. The beginner in 4-H club work usually starts with one pig and his hog enterprise grows as the boy gets older.

The number of boys conducting 4-H club pig demonstrations has grown very rapidly in recent years. It is also interesting to note that of the number of boys who enrolled in 4-H pig-club work there were a larger percentage who completed their work than was the case with any other agricultural commodity excepting sweet potatoes.

In starting a 4-H club boy with a pig demonstration, we try to encourage him to purchase a purebred sow pig. As the pig grows the boy receives the training of developing a breeding animal. The demonstration also keeps him busy at developing pastures, building feed troughs, hog houses, and other equipment. By the time that he has been in club work one year, his sow pig will have farrowed the first litter and he then gets the experience of caring for a sow and her litter and also the experience of feeding out a whole litter of pigs. The demonstration grows in volume very rapidly andthis growth is enjoyed by the boy and his interest in his demonstration is constantly stimulated. After the first year in 4-H pig club work, we encourage the boys to raise and feed out at least two litters of pigs per year. Some of the boys do not feed out all the litter but instead market a portion of the pigs at weaning time. These animals are sold either as feeder pigs to farmers or are sold as breeding animals to other club boys. All of the various methods and practices recommended for adult swine demonstrations are incorporated in the 4-H pig-club demonstrations.

In practically all counties the county agent encourages the local people to provide a 4-H pig show at which the boys can exhibit their pigs. In some counties two such shows are held each year. One of these shows is scheduled in the spring and a second show in the fall. The larger cities which have a public livestock market usually hold district or State 4-H pig shows. The county and district shows usually precede the State show and only the best animals from the county shows are exhibited at the State shows. While these larger State and district shows reach only a small percentage of the boys who engage in 4-H pig club work yet they do have a very important influence on all of the club boys in that it is quite a privilege and honor to have produced pigs that are worthy of exhibition at the larger shows.

In 1936 the 2,992 4-H pig-club boys represented 155 Texas counties. 881 boys own sows, and a total of 5,701 pigs were fed out by the boys. A total of 1,056,940 pounds of pork were produced at a feed cost of $52,020.92. The total value of the pork produced was $102,804.76. Analyzing these figures it was found that the average feed cost for producing pork was 4.92 cents per pound and the farm value of the hogs produced was $9.73 per hundredweight.

--E. M. Regenbrecht, in 1936 Annual Report.

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The men who try to do something and fail are infinitely better than those who try to do nothing and succeed. --Lloyd Jones

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METHODS USED IN 1936-37 BOT CONTROL PROJECT

By W. W. Derrick, State Extension Agent in Animal Husbandry,
Nebraska College of Agriculture

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Seven thousand, five hundred and twenty-eight Nebraska farmers located in 63 of Nebraska's 93 counties participated in the 1936-37 cooperative horse bot control project. A total of 41,777 animals were successfully treated at an average cost of 34 cents per head.

This project was organized early in the fall of 1936 with most of the local veterinarians, horsemen and farmers, the extension specialist and the local agricultural agents cooperating. County-wide meetings were held in which all farmers were invited to attend. At these meetings the plan of the project was explained and the benefits that would likely be derived from such a campaign were discussed. Farmers were interested in the project and anxious to learn how they could cooperate to the best advantage. Where county meetings were not held, the agricultural agent sent circular letters to all farmers giving a detailed explanation of the project and the probable cost of treatment. Farmer leaders were appointed for each township and they, in turn, contacted the horse owners and made up a list of those desiring to cooperate. The list was then given to the local veterinarian or agricultural agent. Routings were made up and a day or two before the work was to be done each farmer received a letter telling him the date and probable time of arrival of the veterinarian who administered the treatment. He was asked to have his horses at a handy location so that they could be treated in the minimum amount of time. This item proved to be of great help as a timesaver and it allowed the veterinarian to treat the maximum number of animals per day.

The system of county organization varied among the different counties. In some counties the agricultural agent took the full responsibility of transporting the veterinarian from farm to farm, arrangements having previously been made to pay him a flat rate per day for his services. This system was quite effective and showed a lower cost per horse. Under another plan, the complete list of farmers desiring to cooperate was furnished the veterinarian and he in turn made the routing, notifying the farmers when he would arrive and made his own collections. This method proved to be a bit more expensive than the plan mentioned above, but even so, in the end the cooperative efforts on the part of the farmers to have everything

ready on the day the veterinarian was to arrive effected a substantial saving to all participating.

Cooperating farmers were well pleased with the results of the campaign. The fact that their horses were free of bots and worms proved to them that they could maintain their horses more economically and in a better state of health. Horse feeds were high in price and quite scarce. The healthier and parasite-free horses made more economical use of this high-priced feed. The treated horses were more easily kept in condition and came up to the time of spring work strong and ready to go into the fields. This one item was probably the most important feature of the project. As a result of this cooperative project the farmers were in a position to get their work done at a lower cost and at the same time had effected a substantial financial saving in the treatment of their horses. This saving amounted to from 5 to 25 cents per head.

The veterinarians did not stop at the time of treating for bots to do other work, but in many instances the horse owners' attention was called to bad teeth and other defects and ailments that needed correction. In many instances arrangements were made to do such work later, which was an advantage to all parties concerned.

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PUREBRED LIVESTOCK IMPORTATIONS

In connection with changes within the livestock industry, the administration by the Department of paragraph 1606 of the Tariff Act of 1930 is a valuable means of determining the numbers and kinds of purebred animals imported. Such animals are admitted to the United States duty free by certificates issued by the Department under the provisions of the act mentioned. During the last fiscal year a total of 15,704 purebred animals were imported. Of these, 11,418 were cattle, 2,365 sheep, 983 dogs, and 792 horses. Swine, goats, and cats constituted the remainder. The total number of purebred animals imported was slightly greater than that of the preceding year.

Of the cattle importation, Holstein-Friesians, Herefords, Ayrshires, and Jerseys were introduced in largest numbers, there being more than 1,000 of each of these breeds. Of the sheep, the principal breeds were Suffolk, Southdown, Shropshire, and Hampshire. Of the horses, the breeds introduced in largest number were the Belgian, Clydesdale, Percheron, and Thoroughbred.

--From Report of the Chief, Bureau of Animal Industry, 1937.

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GROUP OR POOL BUYING OF BULLS

By A. C. Allen, Extension Animal Husbandman,
Colorado State College.

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Many of our rangemen run their cattle in pools. This means that a ranchman seldom gets over 75 percent of his calf crop from his own bulls and many times much less. Many rangemen are very particular as to the kind of bulls they use and are careful in their selection. Some others are less particular and use a much poorer quality of bull.

In Colorado the rangeman is required by law to turn out nothing but registered bulls. The fact remains, however, that not all bulls are good just because they are registered. Therefore, a man might be paying a good price and getting really good bulls and his neighbors be getting the use of them while he is getting the use of inferior bulls from his neighbors.

Because of these conditions we have felt that a group or pool buying of bulls would be advantageous for the following reasons:

It would tend for a more general use of better bulls
It would make for a more uniform calf crop
It would gradually tend to grade up the cow herd
It would increase the price received for the stock sold because of better quality and more uniformity.
It would make a uniform distribution of bull costs
It makes it possible to buy better bulls for less money when several are purchased at one time than when a few are purchased at several different times and from different sources. By using bulls of the same breeding one gets greater uniformity.

There are two ways in which this plan may be worked. The general set up is the same for both.

A committee, usually of three persons, is appointed by the association or pool to be responsible for the purchase of bulls. They also pass on all bulls that are turned out and should a bull not meet the required standard he is not allowed to go to the range.

In arranging for buying the bulls the different members of the pool make known to the committee the number of bulls they will

need and the committee then tries to select these from one breeder insofar as possible and thus to get bulls which are uniform. The different owners then put their brands on them and carry their own bulls through the winter. This is the plan that we have used with our pools to date.

Another plan is where the individual ranchmen let their bull needs be known to the members of the pool and a portion of them purchase the bulls and maintain ownership of them throughout their period of use. In this way the rancher winters the percentage of the bulls which he owns and when they are marketed he gets a percentage of the returns in like proportion.

Whichever method is used we find that better bulls can be obtained for less money than under the individual purchase plan for a breeder will make a much better price on 30 to 40 bulls in a group than he will on the same number of bulls in groups of 3 to 5 or 10 at a time.

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BEEF CATTLE WORK IN IOWA

A continuing beef cattle program has been carried on with cattle feeders and beef cattle producers in 43 counties of the State through county beef cattlemen's associations. Six of these were organized in 1936. Some extension work with adults was conducted in 16 additional counties, or 59 counties in all. Preliminary reports from county agricultural agents showed that a total of 587 cattlemen's discussion meetings were held in 81 counties with a total attendance of 18,740; also, that dinner or banquet meetings were held in 18 counties and that 2,400 persons attended beef cattle tours in 12 counties. In cooperation with other leaders and local groups 4-H baby-beef and purebred-heifer clubs were organized and conducted. This club work resulted in the feeding and showing of 5,852 baby beeves and 486 purebred heifers by nearly 4,000 boys and girls. Some such work was carried on in every county in the State. --From Iowa Annual Report, 1936.

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HOOSIER GOLD MEDAL COLT CLUB

Enrollment in the 1938 Gold Medal Colt Club is the largest in the history of the project. One thousand, one hundred and ninety-five members have nominated 1,759 colts. This is an increase of 66 nominations over last year. Kosciusko County reports the largest membership, with 126 colts nominated. Adams County is second with 119 nominations.

--Purdue Extension Service News Notes, Oct. 1937.

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BEEF CATTLE EXTENSION ACTIVITIES IN LOUISIANA

By W. T. Cobb, Beef Cattle Specialist,
Louisiana State University

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Like other Southern States, Louisiana has persisted through the years of its agricultural history in producing livestock in almost as primitive a fashion as the production of fur-bearing animals. Nature has been allowed to take its course and develop the type and quality of animal whose chief claim to achievement was that it could live through the year with little or no care. Naturally, the grade was low and the quality poor.

Since the elimination of the cattle-fever tick from all of Louisiana made possible the general use of purebred sires, the picture is rapidly changing. More than 4,000 purebred bulls have been distributed to cattlemen in the State since 1934, when a large area was released from quarantine. More than 1,200 of these bulls have been put into service during the past twelve months. The extension service does not claim credit for all of this improvement, but it does claim credit for helping to break down prejudice against better blood, and for better winter care, with adequate summer pastures. These three points are the ones receiving most attention from the educational forces, and it is our hope that all calves produced in Louisiana will ultimately be sired by good sires, that every breeding animal will have sufficient winter feed and care to maintain thrift, and that there will be no unimproved pastures left within the borders of the State.

A total of 1,800,000 cattle is about the maximum the State can support at the present time with the feed supplies in sight. But the calf crop can be raised from an estimated 50 percent to better than 75 percent. This can be and is being accomplished by controlling the breeding season, and providing winter care for breeding herds. Bone meal is also being advocated to correct mineral deficiencies in the native forage.

The Louisiana Cattlemen's Association has been a big help in the development of our beef cattle program and to this organization goes much of the credit for the last "push" necessary to put over the

tick-eradication program. Efficient, public-spirited officers have given their time and efforts freely to accomplish results. This organization and its activities are a definite part of the extension program. We are proud of its objectives and its achievements.

The 4-H beef-calf clubs have been organized for two years. Three special shows have been held. The auction sales held in connection with the calf shows have been highly satisfactory. During the first show, 62 Louisiana calves were sold for an average of $10.70 per hundredweight. The second show, held at Baton Rouge last spring had 60 calves which sold for an average of $13.80 per hundredweight with the grand champion calf bringing $42.00 per hundredweight. The third annual show and sale will be held in late March of 1934, and we are expecting 150 worthy, well-finished calves for that event.

During November of this year, the Agricultural Center, a million dollar addition to the College of Agriculture, was opened with an "All Louisiana Livestock Show." 175 head of excellent beef cattle were on display. These represented 20 breeding herds that would be a credit to any State. We are making strides, and the next few years should see even greater improvement and interest in livestock production. A balanced agriculture through livestock, utilization of all our natural feed resources, including cottonseed meal, and binding our eroding soils with grass for future generations, means agricultural security for southern people -- this, in general, is our program.

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LONG-DISTANCE BREEDING

The birth of a heifer calf at an Argentine "estancia" on July 4 has proved the success of an experiment in long-distance artificial fecundation. On September 19, 1936, seminal liquid was extracted from Jersey and Holstein-Friesian bulls at the U. S. experimental farm in Beltsville, Maryland. The liquid was carefully packed at low temperature, and was sent by air to Buenos Aires, arriving on September 25. The following day seven Aberdeen-Angus cows at Piran, Province of Buenos Aires, were inseminated. The first calf born on July 4 was said to be quite normal. The other six cows are in calf also, and the experiment is expected to turn out equally well in their case.

This experiment is understood to represent the longest distance and greatest length of time in artificial breeding, the results of which are expected to open wide possibilities.

--From Sept. 1937 issue of "The Cattleman"

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Practice is the demonstration of a truth. Science is a demonstration of the reason it works. --James E. Rice

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SHEEP PRODUCTION INVESTIGATIONS

At the Dubois station, Suffolk rams were more efficient than Hampshire rams as sires of Prime and Choice slaughter lambs from Rambouillet and Corriedale ewes under range conditions. Weaning weights averaged 82 pounds for the 267 lambs sired by Suffolk rams and 77 pounds for the 240 lambs sired by Hampshire rams. Fifty-one percent of the Suffolk-sired lambs graded Choice or Prime in slaughter grade, whereas only 34 percent of the Hampshire-sired lambs graded as high. In slaughter grade, the former averaged high Good and the latter only Good.

Studies are being conducted to develop more adequate means of measuring variations in animal form, growth, carcass value, efficiency of feed utilization and similar characters of importance to the animal breeder and livestock geneticist. Data on 67 Southdown, 62 Shropshire, and 68 Hampshire lambs were analyzed to determine the correlation between body measurements taken at 3, 4, 6, and 8 months and those taken at 12 months of age. In general measurements at each successive age showed higher correlation than the earlier measurements. The correlations at even the early ages appeared sufficiently high to indicate that measurements at these ages have some value as measures of mature animal form.

A study of flock records at Beltsville showed that there is a definite relation between birth weight and weights at 3, 6, and 12 months of age. The coefficients of correlation with birth weight were less with each succeeding age but were sufficiently high to indicate that birth weight is valuable as an indicator of growth during the first year. Compared with the lightest one-third of all lambs born, the heaviest one-third at birth weighed 9 pounds more at 3 months and 10.5 pounds more at 12 months. Earlier lambs also tend to make faster growth than later lambs, the earliest one-third born weighing 4.6 pounds more at 3 months and 3.1 pounds more at 12 months of age than the latest one-third born. Single lambs weighed 7.4 pounds more than twins at 3 months and 5 pounds more at 1 year of age.

At the Beltsville station, results from the feeding of lambs individually showed a difference in rate of gain as great as 38 percent between the slowest and fastest gaining lambs fed similar rations under the same environment. In efficiency of gain, there was a variation of 36 percent between the least and the most efficient lambs in terms of total digestible nutrients per pound of gain. Such differences emphasize the importance of determining the individual feed intake and gain when conducting intensive sheep-feeding and nutrition studies. They also reveal the large opportunities that may exist for improving strains of sheep for efficiency in feed utilization. --From Report of the Chief, Bureau of Animal Industry, 1937.

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FIFTH ANNUAL BUFFALO LAMB SHOW

4-H club members from 13 counties exhibited and sold 417 head of lambs for $3,925.30 or an average of 12 1/4 cents per pound in the fifth annual 4-H lamb show and sale recently held at Buffalo. The lamb show forms a part of the Buffalo junior livestock show which was established nine years ago and is fulfilling a useful purpose in sheep improvement work and furnishing a real incentive to our young livestock producers. The entire grading and open market plan of selling is followed except that the sale is by public auction instead of by private sale.

Since the start of the show, 2,418 head of lambs have sold for nearly $25,000 and usually have made money for the members. Over 50 percent of the lambs sold this year were sired by rams which boys purchased for their lamb improvement work.

The winners on county pens of 3 lambs included the following: first, Kenneth Simpson, Livingston; second, Marion Tyler, Genesee; third, Harmon Wingate, Livingston; fourth, D.D. Grove, Schuyler, and Hester Smith, Onondaga, fifth. Livingston County won grand championship on carlots and Allegany reserve. Livingston also won third; Cayuga, fourth; Wayne, fifth; Livingston, sixth; Allegany, seventh; Cayuga, eighth; and Genesee, ninth and tenth.

--H.A. Willman, New York Extension Service.

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EXTENSION ANIMAL HUSBANDMEN GATHERED AT CHICAGO

Extension workers in animal husbandry made a splendid showing by their attendance in Chicago at the annual meeting of the American Society of Animal Production and other events held during "International" week. Some 39 extension specialists representing 29 different States were recorded as having been present. These men came from all extremities of the nation, representatives having been in attendance from Maine in the East, to Washington in the West, and from Texas on the South, to Minnesota on the North. The extension sections of the "Society" meeting were well attended and all were well pleased with the program presented. Officers elected by the extension group for the ensuing year were as follows - W.E. Morris of Minnesota, chairman; Paul F. Newell of Mississippi, vice chairman; and L.P. McCann of Ohio, secretary. To those who are not at present members of the American Society of Animal Production, it is urged that they join by remitting the annual membership fee of $2.50 to Dr. Jay L. Lush, Iowa State College, Ames, Iowa, who will send each new member a copy of the proceedings of the recent meeting which is a valuable publication to all animal husbandry workers.

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"APOPLEXY" IN FEEDING LAMBS

For eight years the so-called "apoplexy" or overeating disease of feeding lambs has been under investigation and observation at the Ohio Experiment Station, Wooster, Ohio. At the recent Livestock Day held there on October 7, B. H. Edgington and D. S. Bell, in charge of animal disease investigations, and sheep investigations respectively, announced that they had obtained evidence, although not conclusive, which indicated that the disease is due to a highly poisonous substance originating in the small intestine. Inoculation of healthy lambs with material obtained from the small intestine of a lamb dead from the disease produced symptoms characteristic of the disease, with death in about four hours. Likewise, inoculation of laboratory animals (white mice) with the same material resulted in death in about one hour.

The investigators point out that the disease is similar to if not identical with the pulpy-kidney disease of Australia, and the so-called entero-toxemia of nursing lambs in Texas and other range States. Full details of how the disease develops and what can be done in the way of treatment or avoidance remain to be determined, although tests are under way in the feed lots of the Ohio station to devise rations which will be unfavorable to the development of the disease and feeding methods tending to lessen the opportunity for the causative agent to accumulate in the intestine and bring about the development of the disease. The results of this work will be awaited with much interest on the part of all those concerned with the lamb feeding industry.

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WOOL INVESTIGATIONS

Wool-scouring studies at Beltsville, show that Corriedale fleeces produced at that station yielded, on the average, 49.52 percent of dry, clean wool, whereas Corriedale fleeces produced at Dubois, Idaho, yielded 35.62 percent. The weight of clean wool in these fleeces, adjusted to 365 days of growth, averaged 5.12 pounds for the Beltsville Corriedales and 3.82 pounds for the Dubois Corriedales. The percentage of clean wool in the Shropshire fleeces grown at Beltsville average 53.65 and in Shropshire fleeces grown at Middlebury, Vt., 55.26 percent, or nearly the same. However, the average weight of clean wool in these Shropshire fleeces, when adjusted to 365 days of growth, was 4.29 pounds for the Beltsville fleeces and 3.65 for the Middlebury fleeces. These results indicate the appreciable effect of environmental conditions and feed on the growth and yield of wool. --From Report of the Chief, Bureau of Animal Industry, 1937.

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BEEF CATTLE INVESTIGATIONS IN THE WEST

Wintering experiments with yearling heifers were carried on at the United States Range Livestock Experiment Station, Miles City, Mont., in cooperation with the Montana Agricultural Experiment Station. A ration of 4.24 pounds of alfalfa hay and 15.75 pounds of mixed Russian-thistles and straw reduced winter feed costs $5.95 per head over a 102-day period compared with the cost of a ration of 19.8 pounds of alfalfa hay, when mixed-thistle hay was valued at $2.50 and alfalfa hay at $10 per ton. Heifers fed the former ration made average winter gains of 13.7 pounds and combined winter and summer gains of 81.4 pounds, whereas those on alfalfa hay alone made average winter gains of 72.7 pounds and combined winter and summer gains of 119.1 pounds. Heifers wintered on alfalfa hay, Russian-thistles and straw weighed on the average 32.3 pounds less per head at the close of the subsequent summer-grazing season then those wintered on a full feed of alfalfa hay, but feed and range cost per 100 pounds of gain was only $8.06 compared with $10.50 for the latter.

In an experiment to determine the value of feeding grain to steers on pasture for the entire period or for the last 69 days of a 125-day grazing period, the results of 3 years' work at the Ardmore Field Station, Ardmore, S. Dak., proved the former practice to be unprofitable. The steers fed grain during the entire period made significantly greater gains but they did not dress significantly higher nor grade higher, either as slaughter cattle or in the carcass, than the steers fed grain for the limited period, and their feed cost was considerably higher.

In a continued experiment at the United States Range Livestock Experiment Station, in cooperation with the Montana Agricultural Experiment Station, breeding cows wintered 141 days on reserved native creek bottoms and upland browse range, supplemented by 88 pounds of cottonseed cake, sustained somewhat heavier winter weight losses than cows fed a winter supplement of 765 pounds of alfalfa hay. However, they were stronger and more active at the end of the winter than the latter animals. There was no significant difference in birth and weaning weights of their calves, but under the first system of management the cost per 100 pounds of calf produced was $2.81, whereas under the second system it was $3.38.

Calves from cows that were grazed on overstocked, moderately stocked, and lightly stocked pastures weighed 313.8, 372, and 361 pounds, respectively, at weaning time. When subsequently wintered

on alfalfa hay for a 100-day period, the three groups of calves required successively increased quantities of hay for each 100 pounds of gain produced. Calves from the cows on the overgrazed range produced larger and more economical gains from weaning time until the close of the winter feeding season but never fully recovered the difference in weaning weight.

--From Report of the Chief, Bureau of Animal Industry, 1937

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RAM CIRCLES OF THE EARLY DAYS

(The following excerpt from a letter written on May 10, 1810, by Thomas Jefferson to President Madison is probably the first formal proposal for the use of the breeding circle in livestock improvement efforts in our nation's history. Jefferson's letter had reference to the Merino sheep which had just been imported from Spain. --C.D.L.)

"Give all the full-blooded males we can raise to the different counties of our State, one to each, as fast as we can furnish them. And as there must be some rule of priority for the distribution, let us begin with our own counties, which are contiguous and nearly central to the State, and proceed, circle after circle, till we have given a ram to every county. This will take about seven years if we add to the full descendants those which will have passed to the fourth generation from common ewes, to make the benefit of a single male as general as practicable to the county, we may ask some known character in each county to have a small society formed which shall receive the animal and prescribe rules for his care and government. We should retain ourselves all the full-blooded ewes, that they may enable us the sobner to furnish a male to every county. When all shall have been provided with rams, we may, in a year or two more, be in a condition to give an ewe also to every county, if it be thought necessary. But I suppose it will not, as four generations from their full-blooded ram will give them the pure race from common ewes.

"In the meantime we shall not be without a profit indemnifying our trouble and expense. For if of our present stock of common ewes, we place with the ram as many as he may be competent to, suppose fifty, we may sell the male lambs of every year for such reasonable price as, in addition to the wool, will pay for the maintenance of the flock. The first year they will be half bloods, the second three-quarters, the third seven-eighths, and the fourth full-blooded, if we take care in selling annually half the ewes also, to keep those of highest blood, this will be a fund for kindnesses to our friends, as well as for indemnification to ourselves; and our whole State may thus, from this small stock, so dispersed, be filled in a very few years with this valuable race."

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RECENT PUBLICATIONS

(Only Federal publications are available from Washington. Others listed may be obtained in most instances from the institution or agency issuing them. Do not write Washington for other than U.S.D.A. publications).

Federal

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"Farm Production from Meat Animals by States, 1935 - 1936," Bureau of Agricultural Economics, U.S.D.A., Washington, D. C. - 19 page Mimeograph, June 1937.

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"Infectious Equine Encephalomyelitis," by L. T. Giltner and M. S. Shahan, Bureau of Animal Industry, U.S.D.A., Washington, D.C. - 8 page Mimeograph, June 1937.

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"The Response of Government to Agriculture," by Arthur P. Chew, Office of Information, U.S.D.A., Washington, D.C. - 107 page bulletin, 1937.

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State

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"Care of Meat in the Household Refrigerator," by Louis J. Peet - Iowa Experiment Station Research Bulletin 215, pp. 30, May 1937.

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"Baled Straw Silos," by K. B. Huff - Missouri Extension Service Leaflet 46, pp. 2, illus., Sept. 1936.

"Estrus, Ovulation, and Related Phenomena in the Ewe," by Fred F. McKenzie and Clair E. Terrill - Missouri Experiment Station Research Bulletin 264, pp. 88, illus. 25, July 1937.

"Native Lumber Silos," by K. B. Huff - Missouri Extension Service Circular 369, pp. 4, illus., Sept. 1937.

"The Reproductive Capacity of Rams," by Fred F. McKenzie and Victor Berliner - Missouri Experiment Station Research Bulletin 265, pp. 143, illus. 39, Aug. 1937.

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Other

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"Rambouillet Sheep," by Frederic S. Hultz - published by The American Rambouillet Sheep Breeders' Association, Marysville, Ohio. pp. 32, illus.

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A FUNDAMENTAL NEED

One of the imperative tasks of our day is to interpret the purposes, methods and results of science in such wise that this greatest adventure of the human spirit may be "understanded of the people." Science needs to be made use of, but understanding of it must precede complete utilization.

--George W. Gray in The Advancing Front of Science.

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PROGRESS

New occasions teach new duties,
Time makes ancient good uncouth,
They must upward still and onward
Who would keep abreast of truth.
Lo! before us gleam our campfires,
We ourselves must pilgrims be,
Launch our Mayflower and steer boldly
Into the desperate winter sea.

--Lowell

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